

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

---

SMITH & NEPHEW, INC. )  
Plaintiff, )  
 )  
 )  
 )  
v. ) CIVIL ACTION NO. 10-cv-10951-RWZ  
 )  
INTERLACE MEDICAL, INC. )  
Defendant )  
\_\_\_\_\_ )

**OPENING MARKMAN BRIEF OF PLAINTIFF SMITH & NEPHEW, INC.**

## I. INTRODUCTION

Plaintiff Smith & Nephew, Inc. (“S&N”) submits this opening brief in support of its proposed claim constructions for claim terms that are in dispute.<sup>1</sup> S&N’s proposed constructions are consistent with the ordinary meaning and the intrinsic evidence, while those constructions proposed by Defendant Interlace Medical, Inc. (“Interlace”) improperly ignore the plain and ordinary meaning of claim terms as taught in the specification and as understood by persons of skill in the art, and often violate the claim differentiation doctrine. For example:

- S&N proposes construing the term “drive” to mean “all components between a motor/power source and a load,” which is consistent with the plain meaning of the term as understood by those with ordinary skill in the art of mechanical design, while the construction proposed by Interlace improperly imports limitations that don’t exist in the patent or specification.
- S&N propose construing the term “attached” to indicate a connection between two objects or things that constrains at least one degree of freedom between those objects, while Interlace’s proposed construction would run afoul of the doctrine of claim differentiation by reading into its construction a limitation contained in dependent claim.

For these claim terms and those discussed in further detail below, only S&N’s proposed constructions are true to the claim language, the intrinsic record, and the understanding of persons of ordinary skill in the art.

## II. BACKGROUND

S&N asserts in this patent infringement case that Interlace’s Myosure Tissue Removal Device (the “Accused Device”) infringes S&N’s U.S. Patent No. 7,226,459 (the “’459 Patent”). *See Amended Complaint, Dkt. # 14.* The ’459 Patent has thirty-five (35) claims directed to a surgical instrument for cutting semi-rigid tissue. *See Declaration of Maia H. Harris, Esq. In Support of Opening Markman Brief of Plaintiff Smith & Nephew (“Harris Decl.”), Ex. 1, ’459*

---

<sup>1</sup> The parties have agreed that the construction of the claim term “cutting member” is “a member that cuts tissue.” The construction of the remaining claim terms set forth in this brief is still in dispute.

Patent at Col. 1, lines 6-8, Claims 1-35.<sup>2</sup>

Among other features, the claimed instrument includes a cutting member that (1) is coupled to a drive; and (2) rotates, translates, and reciprocates to cut tissue, in response to only a rotational force applied to the drive in a **single** direction. *Id.*, Cl. 1-35. By way of a simplified example, this feature of the claimed invention is illustrated below in Figure E, which shows a rotational force applied in a single direction to a drive, which is coupled to and causes simultaneous rotation, translation (i.e., axial movement in one direction), and reciprocation (i.e., alternating back and forth motion) of a cutting member.

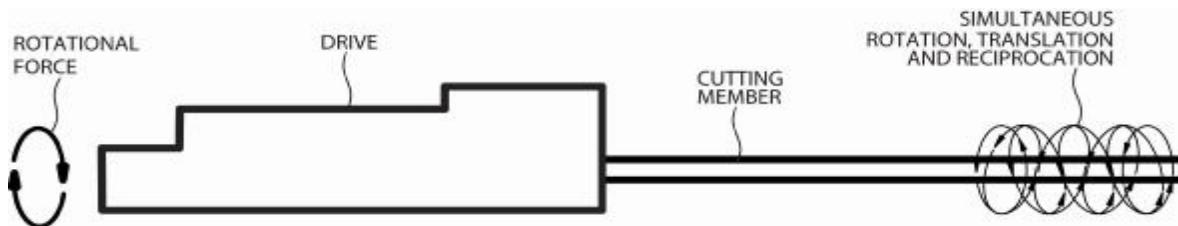


FIG. E

Emphasized in representative independent claims 1 and 32, and dependent claims 11, 19 and 20, are the claim terms in dispute:

1. A surgical instrument, comprising:  
a cutting member including an implement for cutting tissue; and  
a drive coupled to the cutting member to simultaneously rotate, translate, and reciprocate the cutting member in response to only a rotational force applied to the drive in a single direction and to cut tissue during simultaneous rotation and translation of the cutting member;  
 wherein the drive includes a drive member attached to the cutting member, the drive member including a helical groove, and the drive includes a translation piece disposed in the groove such that rotary driving of the drive member results in simultaneous reciprocation of the drive member relative to the translation piece.

<sup>2</sup> Hereafter, citations to the '459 Patent shall follow the following format: '459 Patent at X:Y-Z, where "X" refers to the Column citation, and "Y-Z" refers to lines. Citations to claims will be as follows: '459 Patent at Cl. X.

11. The instrument of claim 1, wherein the implement comprises a chamfered cutting edge at a distal end of the cutting member.

19. The instrument of claim 1, wherein the translation piece includes a follower received within the groove and configured to follow the groove as the drive member is rotated.

20. The instrument of claim 19, wherein the follower has an arched bridge shape.

32. A surgical instrument, comprising:

a cutting member including an implement for cutting tissue;

a drive coupled to the cutting member to simultaneously rotate, translate, and reciprocate the cutting member in response to only a rotational force applied to the drive in a single direction and to cut tissue during simultaneous rotation and translation of the cutting member; and

an outer tubular member, the cutting member being received within the outer tubular member, the outer tubular member including a cutting window disposed proximate to a tip of the outer tubular member.

*Id.*, Cl. 1, 11, 19, 20, and 32.

Figure A below illustrates one embodiment of the claimed instrument with a drive that includes a drive member with a helical groove (150), and a translation piece (145) disposed in the groove. The rotational driving of the drive member (150) *in a single direction* results in the simultaneous rotation, translation, and reciprocation of the cutting member (185).

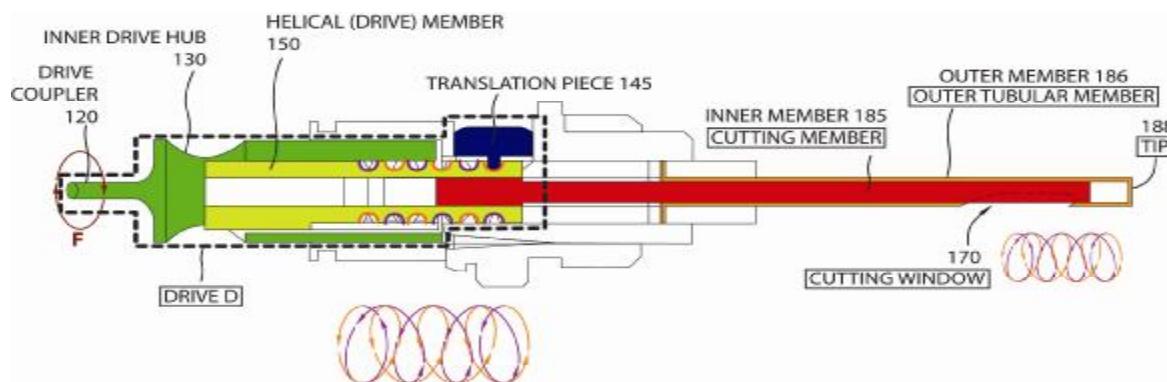


FIG. A

### III. PRINCIPLES OF CLAIM CONSTRUCTION

“[C]onstruction of a patent, including terms of art within its claims, is exclusively within

the province of the court.” *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 372 (1996).

To determine the proper meaning of a disputed term in a patent claim, the Court looks first to the “intrinsic evidence,” namely the claim language itself, the specification, and the prosecution history. *See Digital Biometrics, Inc. v. Identix, Inc.*, 149 F.3d 1335, 1344 (Fed. Cir. 1998). “Even within the intrinsic evidence, however, there is a hierarchy of analytical tools.” *Id.* As an initial matter, the Court looks to the “words of the claims themselves to define the scope of the patented invention.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*) (“[i]t is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude”) (internal quotations and citations omitted).

Patent claim terms are given the “meaning that [they] would have to a person of ordinary skill in the art in question at the time of the intention....” *Phillips*, 415 F.3d at 1313. “Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Id.* Usage of a claim term in one claim “can often illuminate the meaning of the same term in other claims.” *Id.* at 1314. This is because claim terms are “normally used consistently throughout the patent.” *Id.* Differences among the claims are also meaningful and, as such, if a limitation appears in one claim but does not appear in another claim, it is improper to construe both claims as having the limitation. *See Rodime PLC v. Seagate Tech., Inc.*, 174 F. 3d 1294, 1304-05 (Fed. Cir. 1999); *see also Phillips*, 415 F. 3d at 1315 (“the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim”).

The patent specification can also be helpful in understanding the meaning of claim terms. For example, “the specification may reveal a special definition given to a claim term by the

patentee.” *Phillips*, 415 F.3d at 1316. However, care must be taken not to import limitations from the specification into the claims under the guise of claim construction. *Id.* at 1323. Therefore, in interpreting the meaning of a patent’s terms, the Court must consult the specification in order to determine whether it “expressly defines terms used in the claims or ... [whether] it defines terms by implication.” *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996).

Finally, the prosecution history before the PTO is an additional source of intrinsic evidence that may be used to ascertain the meaning of the claim terms. The prosecution history may provide evidence of the meaning of the claim terms in that it can show “how the [PTO] and the inventor understood the patent.” *Phillips*, 415 F.3d at 1317 (internal quotations and citations omitted). The prosecution history “consists of all express representations made by or on behalf of the applicant to the [patent] examiner to induce a patent grant.” *Howmedica Osteonics Corp. v. Wright Medical Technology, Inc.*, 540 F.3d 1337, 1346 (Fed. Cir. 2008) (internal quotations and citations omitted). Statements made during prosecution, however, must be taken in context. See *IMS Tech., Inc. v. Haas Automation, Inc.*, 206 F.3d 1422, 1434 (Fed. Cir. 2000).

Although in many situations an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed term, the Court may rely upon extrinsic evidence, such as dictionaries, treatises, and expert testimony, if necessary. See, e.g., *Tex. Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1202 (Fed. Cir. 2002) (stating that dictionaries, encyclopedias, and treatises may also be employed and are “particularly useful” resources “to assist the court in determining the ordinary and customary meaning of the claim terms”); *Pall Corp. v. Micron Separations, Inc.*, 66 F.3d 1211, 1216 (Fed. Cir. 1995) (“Extrinsic evidence may also be considered, if needed to assist in determining the meaning or scope of technical terms in the claims”). Such “extrinsic”

evidence, however, should not be used to contradict a meaning that is clearly revealed in the intrinsic evidence. *Vitronics*, 90 F.3d at 1584 n. 6. Courts should weigh “all the evidence bearing on claim construction...keep[ing] in mind the flaws inherent in each type of evidence and assess[ing] that evidence accordingly.” *Phillips*, 415 F.3d at 1319.

#### **IV. S&N’S PROPOSED CONSTRUCTION OF THE CLAIM TERMS.**

- A. Claim Term: “a drive coupled to the cutting member to simultaneously rotate, translate, and reciprocate the cutting member in response to only a rotational force applied to the drive in a single direction”**

<b>S&amp;N’s Proposed Claim Construction</b>	<b>Interlace’s Proposed Claim Construction</b>
<p>“all components between (a) a motor/power source and (b) a cutting component having a cutting element, such that the cutting component simultaneously (i) rotates, (ii) translates, and (iii) reciprocates in response to a rotary motion being applied in a single direction to one of the components between (a) and (b)”</p> <p>where “drive” means “all components between a motor/power source and a load”</p>	<p>This claim element is a means-plus-function claim governed by 35 U.S.C. §112 ¶ 6.</p> <p><i>Function:</i> “simultaneously rotate, translate, and reciprocate the cutting member in response to only a rotational force applied to the drive in a single direction”</p> <p><i>Structure:</i> helical drive member 150 and translation piece 145</p> <p>Alternatively, if the claim element is not governed by 35 U.S.C. §112 ¶6, then Interlace would propose the following construction:</p> <p>“a single mechanism that converts an applied rotational force in a single direction into reciprocating and translating forces on the cutting member and that directly transfers the applied rotational force to the cutting member”</p>

##### **1. S&N’s Construction Is Consistent With the Ordinary Meaning of the Term “Drive” and the Intrinsic Evidence**

The term “drive” appears in all independent claims on the ’459 Patent. “Drive” is not expressly defined by the inventors. However, as is understood by persons of ordinary skill in the relevant art of mechanical design, the term “drive” refers generally to a configuration of

components that transmits force or power in a machine. *See e.g.*, Declaration of Dr. Neville Hogan, Ph.D. (“Hogan Decl.”), ¶ 16-18; IEEE 100 The Authoritative Dictionary of IEEE Standards Terms, Seventh Addition (“[t]he equipment used for converting available power into mechanical power suitable for the operation of a machine”); YourDictionary.com <http://www.yourdictionary.com/drive> (last visited Oct. 12, 2010) (“[a] device that communicates motion to a machine or machine part”); Oxford Dictionaries, [http://www.oxforddictionaries.com/view/entry/m\\_en\\_gb0245110](http://www.oxforddictionaries.com/view/entry/m_en_gb0245110) (last visited Oct. 12, 2010) (“[t]he transmission of power to machinery or to the wheels of a motor vehicle”); Dictionary.com, <http://www.dictionary.reference.com/browse/drive> (last visited Oct. 12, 2010) (“[a] driving mechanism, as of an automobile; *gear drive*; *chain drive*”).<sup>3</sup>

The use of the term “drive” in each of the claims of the ’459 Patent is consistent with the plain and ordinary meaning of the term as understood by those of skill in the art of mechanical design. Thus, claims 1, 23, 25, 27, and 28 all call for a drive that is between the cutting member (that applies the load), and a motor (or other power source) that applies a rotational force to the drive: **“a drive coupled to the cutting member to simultaneously rotate, translate, and reciprocate the cutting member in response to only a rotational force applied to the drive.”** ’459 Patent, Cl. 1, 23, 25, 27, and 28 (emphasis added). As even Interlace appears to admit, the claims (and specification) also support a construction in which the rotational force applied to the drive is in a single direction. *Id.*, Cl. 1, 25, 27, and 28 (claiming the simultaneous rotation, translation, and reciprocation of the cutting member “in response to only a rotational force applied to the drive **in a single direction**”); *id.* 4:40-44 (noting that “the rotary driver only needs to rotate in one direction, and does not require reversal of the rotational direction upon the

---

<sup>3</sup> The cited dictionary references for the term “drive” are collectively attached as Ex. 2 to the Harris Decl.

translation piece 145 reaching the end of one of the helical channels 156, 158").

Finally, the claims, specification, and prosecution history all make clear that the drive may be comprised of a number of different components. Thus, claims 1, 25, 27, and 28 claim that "the drive includes a drive member," claims 1 and 30 further claim that the "drive includes a translation piece," and claims 2 and 25 claim that "the drive [includes] an inner hub drive." *Id.*, Cl. 1, 2, 25, 27, 28, and 30. The specification also makes reference to a drive comprised of a number of different components:

The drive includes a driver member ... The drive includes a translation piece ...  
In the illustrated embodiment, the drive includes an inner drive hub ...

*Id.* at 1:28-35. Statements made by the PTO during the prosecution of the '459 Patent further support S&N's construction of "drive" as comprising multiple drive components:

...none of the prior art of record, alone or in combination, discloses a surgical instrument with, inter alia, **a cutting member and a drive coupled to the cutting member** where **the drive includes a drive member and a translation piece** for reciprocation of the drive member relative to the translation piece, while the drive member is rotationally driven, where **the drive includes a translatable inner drive hub coupled to the drive member**, and where the translation piece includes a follower.

*See* Harris Decl. at Ex. 8, Third Office Action (July 19, 2005) at p. 4-5 (emphasis added).

## 2. **Interlace Cannot Meet Its Burden to Rebut The Presumption that This Claim Element is Not A Means-Plus-Function Claim Governed By Section 112 Para. 6**

A claim term that does not use the word "means" triggers a rebuttable presumption that §112 P. 6 does not apply. *Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1358 (Fed. Cir. 2004) (citing *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1369 (Fed. Cir. 2002)). The "presumption flowing from the absence of the term 'means' is a strong one that is not readily overcome." *Lighting World*, 382 F.3d at 1358, 1362 (noting that "it is not surprising that we [the Federal Circuit] have seldom held that a limitation not using the term 'means' must

be considered to be in mean-plus-function form”).

The word “means” is not used in the claim element at issue, nor does it appear anywhere else in the ’459 Patent. ’459 Patent, Harris Decl., Ex. 1. Thus, in order to overcome the rebuttable presumption that this claim element is *not* to be construed under § 112 P 6, Interlace has the burden of demonstrating that the claim element fails to “recite sufficiently definite structure” or recites a “function without reciting sufficient structure for performing that function.” *Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1319-20 (Fed. Cir. 2004) (internal quotations and citations omitted). Interlace simply cannot meet this burden.

The critical structural-connoting term in the claim element at issue is “drive” which recites a far more specific structure than the “generic structural terms” that the Federal Circuit has found to lack sufficient structure. *See e.g., M.I.T. v. Abacus Software*, 462 F.3d 1344, 1354 (Fed. Cir. 2006) (noting that such generic terms as “mechanism,” “element,” and “device” typically do not connote sufficiently definite structure, particularly where such terms are used as synonyms for the term “means”). As set forth above, a person of ordinary skill in the art of mechanical design would have an understanding that the term “drive” is a configuration of components in a machine that is used to transmit power from a power source (such as a motor) to a load (i.e., the motion of the machine). *See* Hogan Decl. at ¶ 16-17; Harris Decl., Ex. 2. In other words, the term “drive” *specifically* connotes a defined structure within a machine. *See e.g., Lighting World*, 382 F.3d at 1359-61 (noting that the term “circuit,” defined in dictionaries as “the complete path of an electric current including any displacement current,” connotes sufficient structure); *see also Linear Tech.*, 379 F.3d at 1320 (noting that it is appropriate to consider evidence such as dictionary definitions, technical texts and manuals, as well as expert testimony in an effort to determine whether a claim term recites sufficient structure).

Here, the claim language combines a structure-connoting term “drive” that is “coupled to the cutting member,” along with a description of the drive’s operation:

...a drive coupled to the cutting member **to simultaneously rotate, translate, and reciprocate the cutting member in response to only a rotational force applied to the drive in a single direction and to cut tissue during simultaneous rotation and translation of the cutting member...**

*See e.g.*, ’459 Patent at Cl. 1, 25, 27, 28, 32 (emphasis added). In such circumstances, “sufficient structural meaning generally will be conveyed to persons of ordinary skill in the art, and §112 P 6 presumptively will not apply.” *Linear Tech.*, 379 F.3d at 1320 (citing *Apex, Inc. v. Raritan Computer, Inc.*, 325 F.3d 1364, 1373 (Fed. Cir. 2003)); see also *Haney v. Timesavers, Inc.*, No. 94-1287, 1995 U.S. App. LEXIS 2535, at \*8-9 (Fed. Cir. February 10, 1995) (finding the term “a double-drive mechanism interposed between and connecting the platen and frame” recited sufficient structure, and that recitation, in concert with the accompanying claimed function, “removed the claim from the purview of § 112”) (attached hereto as Exhibit 1).

Similar to the claim language at issue in *Linear* (“circuit”) and *Haney* (“double-drive mechanism”), the functional language of the claim element at issue here is intended to provide a functional limitation to the “drive coupled to the cutting member,” including the objective of the “drive” (*i.e.*, to simultaneously rotate, translate, and reciprocate the cutting member in response to only a rotational force applied to the drive in a single direction), and the desired output of the “drive” (*i.e.*, to cut tissue during simultaneous rotation and translation of the cutting member).

*See* ’459 Patent, Cl. 1, 25, 27, 28, 32. From this language, persons of ordinary skill in the art of mechanical design would understand the structural configuration of the drive from the use of the term “drive coupled to the cutting member” and the qualifying language identifying the objective and desired output of the claimed drive configuration. *See e.g.*, Hogan Decl. at ¶ 16-20 (noting, *e.g.*, that a “drive” refers to a configuration of components in a machine designed for a specific

purpose (*i.e.*, transmission of power), whereas the term “mechanism” refers more generally to a configuration of components such that the relative motion of said components is allowed in at least one degree of freedom).

Many of the independent claims recite further structure that is broader in scope than Interlace’s proposed structural definition (*i.e.*, “helical drive member 150 and translation piece 145”). These drive components appear in the drawings and are described in the specification, but many of the claims in which the claim element at issue appears contain further structural language that is broader in scope than Interlace’s proposed limitation. For example, Claim 1 recites the following additional structural configuration for the claimed “drive”:

wherein the drive includes a drive member attached to the cutting member, the drive member including a helical groove, and the drive includes a translation piece disposed in the groove such that the rotary driving of the drive member results in simultaneous reciprocation of the drive member relative to the translation piece.

’459 Patent, 5:64-67. While Claim 1 recites a drive that includes a drive member and a translation piece, nothing in the language of Claim 1 limits the claimed drive member to the helical drive member 150 that is depicted in the specification; and nothing in the language of Claim 1 limits the claimed translation piece to the translation piece 145 that is depicted in the specification. Simply put, Interlace’s attempt to limit the structure-connoting term “drive” by declaring it a “means-plus-function” claim term constitutes nothing more than a smokescreened attempt to import limitations from the specification into the claims. *Laitram Corp. v. Cambridge Wire Cloth Co.*, 863 F.2d 855, 865 (Fed. Cir. 1988) (“references to a preferred embodiment, such as those often present in a specification, are not claim limitations”).

### **3. Interlace’s Alternative Proposed Construction Improperly Imports Limitations That Contradict the Patent Claims and the Specification.**

Interlace’s alternative proposed construction similarly imports limitations, although these

limitations appear to be derived from thin air. Specifically, Interlace suggests that the claimed “drive” be limited to “a single mechanism” that “directly transfers” the claimed rotational forces to the cutting member. Leaving aside the ambiguity inherent in Interlace’s proposed construction, these limitations are not to be found *anywhere* in the intrinsic evidence, and Interlace has identified no extrinsic evidence in support of this construction. As such, only S&N’s claimed construction is consistent with the claims and the specification, as well as the plain meaning of the terms as understood by those with ordinary skill in the art.

**B. Claim Term: “drive member attached to the cutting member”**

S&N’s Proposed Claim Construction	Interlace’s Proposed Claim Construction
“a component of the drive connected to a component including a cutting element such that at least one degree of freedom is constrained between the two components”  where “attached” means “a connection in which one component constrains at least one degree of freedom of another component”	“a member of the drive attached to the cutting member that rotates and reciprocates with the cutting member”

The term “attached” appears in a number of claims in the ’459 Patent, both independent and dependent. Again, the term “attached” is not expressly defined by the inventors. However, it is a word that is used in ordinary parlance, often referring to a connection of some kind between two or more things. *See e.g.*, Webster’s New Twentieth Century Dictionary, Unabridged, Second Edition (“attached” is “[t]o cause to adhere; to tie, bind, or fasten; as to attach one thing to another by a string, by glue, etc.”); The America Heritage Dictionary, Second College Edition (“attach” is “[t]o fasten on or affix to; connect or join”).<sup>4</sup> Thus, an attachment

---

<sup>4</sup> Cited dictionary references for the term “attach”/“attached” are collectively *attached* as Ex. 3 to the Harris Decl.

can be a fixed one, in which all degrees of freedom in the attached article are constrained (*e.g.*, an attachment that might occur as a result of the use of glue or an epoxy); and it can also be a less fixed one, in which fewer degrees of freedom of the attached article are constrained (*e.g.*, an attachment that might occur as a result of attaching one thing to another by string).

The “attachment” claimed in the ’459 Patent is always an attachment of a drive member to the cutting member. ’459 Patent, Cl. 1, 10, 25, 27, 28. What the parties dispute is *how fixed* the claimed attachment must be. S&N proposes a broad construction, including both a more fixed attachment (*i.e.*, one that constrains more than one degree of freedom of the attached components), as well as an attachment that allows for more relative movement between the attached components (*i.e.*, one that constrains only one degree of freedom). This construction is consistent with the use of the term “attached” in the intrinsic evidence.

For example, independent Claim 1 broadly recites a “...drive member attached to the cutting member...” *Id.*, Cl. 1. No further limitation on the form of attachment is recited in Claim 1, suggesting that the claimed attachment includes configurations that constrain only one degree of freedom between the drive member and the cutting member, as well as configurations that constrain more than one degree of freedom.

By way of contrast, dependent Claim 10 recites a more limited attachment, which constrains at least two degrees of freedom:

10. The instrument of claim 1, wherein the cutting member is attached to the drive member to move rotatably and axially with the drive member.

*Id.*, Cl. 10. The specification describes embodiments with a similar limitation, *e.g.*, “[t]he cutting member is attached to the drive member to move rotatably and axially with the member.” *Id.*, 1:42-44. In other words, Claim 10 recites, and one embodiment in the specification is described such that, the cutting member and the drive member must rotate together (degree of freedom 1),

and move along the same axis together (degree of freedom 2). This is precisely the limitation that Interlace proposes is the proper construction of the phrase “drive member attached to the cutting member.”

Importantly, the limitation in Claim 10 is not present in Claim 1, or any other claim that recites an attachment between a drive member and the cutting member. Such differences in claims are meaningful, since if a limitation appears in one claim but does not appear in another claim, it is improper to construe both claims as having the limitation. *See Rodime PLC*, 174 F.3d at 1304-05; *see also Phillips*, 415 F.3d at 1315 (“the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim”). Further, references to a preferred embodiment, such as those often present in a specification, are not claim limitations. *Laitram Corp.*, 863 F.2d at 865. Yet this is precisely what Interlace’s proposed construction does: import the limitation set forth in Claim 10, and as set forth in a preferred embodiment, to all other claims in which the term “attached” appears. This is improper, and only S&N’s proposed construction gives full meaning to the claim term “drive member attached to the cutting member” in all claims in the ’459 Patent.

### C. Claim Term: “coupled”

S&N’s Proposed Claim Construction	Interlace’s Proposed Claim Construction
“a connection in which one component influences motion of a second component, without necessarily constraining any degree of freedom of the second component”	“connected to”

Like the term “attached,” the claim term “coupled” is not specifically defined by the inventors, but common usage of the word also connotes a connection of some kind. *See e.g.*, Webster’s New Twentieth Century Dictionary, Unabridged, Second Edition (“couple” is “[t]o link, join, or connect (one thing) with another”); The American Heritage Dictionary of the

English Language, Fourth Edition (“coupling” is “[s]omething that joins or connects two things together...To link together, connect”).<sup>5</sup> As indicated by the broader term “link” that is used in these definitions, “coupled” generally refers to a looser connection between two or more things than the connection made if those things were “attached.”

S&N’s proposed construction adds context to distinguish those claimed components that are “coupled” from those that are “attached,” by clarifying that the “coupled” connection influences the motion of the coupled component, without necessarily constraining any degree of freedom. This proposed distinction is consistent with the use of the term in claims which recite both a coupling and an attachment. *See e.g.*, ’459 Patent, Cl. 1 (reciting “a drive coupled to the cutting member” and a “drive member attached to the cutting member”). It is also consistent with the use of the term “couple” in describing various embodiments in the specification. *See e.g.*, *id.* 3:30-33 (“The helical member 150 and a translation piece 145 are coupled together such that rotation of the helical member 150 **causes** linear translation of the helical member 150, as described further below”) (emphasis added); 4:59-61 (“The coupling of the follower 145a to the helical channels 156, 158 **causes** the helical member 150 to also translate”) (emphasis added); 3:56-61 (“The slot 134 of the inner drive hub 130 is coupled with a key 152 of the helical member 150 (see FIG. 4B) so that rotation of the inner drive hub 130 **causes** the helical member 150 to rotate **while allowing** the helical member 150 to move axially relative to the inner drive hub 130, e.g., the key 152 axially slides along the slot 134”) (emphasis added).

While Interlace’s proposed construction is not necessarily inaccurate, it lacks any context with respect to the more limited meaning of attached, and provides no further clarity to use of the term in the ’459 Patent. As such, S&N’s proposed construction is more appropriate, and least

---

<sup>5</sup> Cited dictionary references for the term “couple”/“coupling” are collectively attached as Ex. 4 to the Harris Decl.

likely to lead to later disputes over the scope of the asserted claims. *See e.g., O2 Micro International Ltd. v. Beyond Innovation Technology Co., Ltd.*, 521 F.3d 1351, 1361 (Fed. Cir. 2008) (noting that claim construction may involve not only disputes over the *meaning* of the words, but the *scope* that should be encompassed in claim language).

#### D. Claim Term: “translation piece”

S&N’s <b>Proposed Claim Construction</b>	Interlace’s <b>Proposed Claim Construction</b>
“a drive component located at least in part in a helical groove to enable simultaneous reciprocation, translation, and rotation of a drive member relative to this drive component when a rotary motion is applied to the drive in a single direction”	“a non-reciprocating piece of the drive that converts an applied rotational force into a translational force on the cutting member”

The claim term “translation piece” is not given a single express definition by the inventors. However, the use of the term in the claims of the ’459 Patent supports S&N’s proposed construction.

For example, each claim in which the term “translation piece” appears recites that it is a component (or “piece” or “member”) of the claimed drive. ’459 Patent, Cl. 1, 8, 19, 21, 22, 30, and 31. Further, independent claim 1 (to which Claims 8, 19, 21, and 22 depend) recites the remaining limitations identified in S&N’s proposed definition:

...a drive coupled to the cutting member to simultaneously rotate, translate, and reciprocate the cutting member in response to **only a rotational force applied to the drive in a single direction...**

...wherein the drive includes a drive member attached to the cutting member, the drive member including a helical groove, and **the drive includes a translation piece disposed in the groove such that rotary driving of the drive member results in simultaneous reciprocation of the drive member relative to the translation piece.**

*Id.*, Cl. 1, 8, 19, 21, and 22 (emphasis added). Dependent claims 30 and 31 (which depend ultimately from Claim 28) also recite each of the remaining limitations identified in the proposed definition. *Id.*, Cl. 28, 30, 31.

Interlace's proposed construction ("translation piece" is "a non-reciprocating piece of the drive...") reads out explicit elements in Claim 1. Specifically, Claim 1 *expressly requires* that the translation piece reciprocate relative to the drive member. *Id.*, Cl. 1 ("the drive includes a **translation piece** disposed in the groove such that rotary driving of the drive member **results in simultaneous reciprocation of the drive member relative to the translation piece**") (emphasis added). While some embodiments of the invention may include a translation piece that remains stationary relative to some other drive component, the claimed translation piece cannot be a "non-reciprocating piece of the drive" without reading limitations in Claim 1 out of the patent entirely. Only S&N's proposed definition incorporates all of the various claimed elements of a translation piece without reading required elements out of the patent.

**E. Claim Term: "chamfered cutting edge"**

S&N's <b>Proposed Claim Construction</b>	Interlace's <b>Proposed Claim Construction</b>
"a sloping face of a cutting element"	"a cutting edge that has been sharpened for cutting tissue"

The claim term "chamfered cutting edge" appears in three dependent claims, relating to the cutting edge at the end of the claimed cutting member. '459 Patent, Cl. 11, 12, and 13. As set forth in the specification, the cutting member may be "angled to a chamfered point so that the cut in the targeted tissue is initiated on one side, and then extends across the width of the tissue." *Id.*, 5:34-38. A "chamfer" is "the surface formed by cutting away the angle at the intersection of two faces of a piece of timber, stone, or metal; a beveled edge." See Webster's Third New International Dictionary; see also Merriam-Webster.com, [www.merriam-webster.com/dictionary/chamfer](http://www.merriam-webster.com/dictionary/chamfer) (last visited Oct. 12, 2010) ("chamfer" is "to make a chamfer on; bevel").<sup>6</sup> Thus, a "chamfered cutting edge," as that term is ordinarily understood, refers to a sloping, or

---

<sup>6</sup> Cited dictionary references for the term "chamfer" are collectively attached as Ex. 5 to the Harris Decl.

beveled, edge of the cutting member, as S&N's proposed construction recognizes.

Interlace's definition, on the other hand, is ambiguous, imports non-existent limitations, and is overly broad. For example, dependent claims 11, 12, and 13 all depend from Claim 1, which recites a cutting member that cuts tissue. As a practical matter, the claimed cutting member will have a cutting edge, but Claim 1 does not recite a "sharp edge," and neither the claims nor the specification suggest that the cutting edge "has been sharpened" by a sharpening process (e.g., similar to sharpening a tip of a pencil). Claims 11, 12, and 13 add a further limitation of a "chamfered" or specific kind of "cutting edge" (i.e., one with a sloped or beveled edge). While the recited "chamfered cutting edge" could be the result of a sharpening process, Interlace's proposed construction, which recites a cutting edge "that has been sharpened," (1) is ambiguous (insofar as the term "sharp" is a subjective term open to interpretation), (2) improperly imports limitations that don't exist in the specification or claim (insofar as it requires that the edge "has been sharpened"), and (3) is overly broad (insofar as the proposed "sharpening" limitation will not necessarily result in a "chamfered" edge). In other words, only S&N's proposed construction, which recognizes the *kind* of edge that is claimed, is consistent with the plain and ordinary meaning of the term as it is used in the patent.

#### F. Claim Term: "arched bridge shape"

S&N's Proposed Claim Construction	Interlace's Proposed Claim Construction
"a shape in which two legs are connected by a curved concave portion"	"a circular arc of less than 180 degrees dimensioned to match the diameter of the helical channels in the helical member"

The claim term "arched bridge shape" appears in one dependent claim, relating to the shape of a follower that is included in a translation piece. '459 Patent, Cl. 20. S&N's proposed construction is consistent with the description of the follower piece in the specification, as well

as with the general understanding regarding the about the curved shape of an “arch.”

Specifically, the specification describes an embodiment of the follower piece as having “legs 145a2 [that] form an arch and rest in the channels of the double helix 156, 158.” *Id.*, 4:45-47, FIGS. 5B-5D. Further, “[t]he arch of the legs 145a2 is dimensionally related to the diameter described by the helical channels 156, 158 of the helical member 150.” *Id.*, 4:49-51, FIGS. 5B-5D. Thus, S&N’s proposed construction includes these features of the claimed shape.

“Arch” is also word that has a generally understood meaning of part of a curved shape. *See e.g.*, Webster’s Third New International Dictionary (defining “arch” as “a part of a curve”); Chambers Dictionary of Science and Technology (defining “arch” as “[a] form of structure having a curved shape, used to support loads or to resist pressures”).<sup>7</sup> S&N’s construction is also consistent with the generally familiar concept of a “arch” as having a curved shape.

Interlace’s proposed definition does not appear to be based on the specification or any generalized understanding of an “arched” shape. The reference to “less than 180 degrees” has no support in the claims, specification, or extrinsic evidence at all. Indeed, the specification instead describes the dimensions of the arc in at least one embodiment as being related to “the diameter described by the helical channels 156, 158 of the helical member 150.” *Id.*, 4:49-51, FIGS. 5B-5D. The reference to a “circular arc” is similarly unsupported.

#### G. Claim Term: “cutting window”

S&N’s Proposed Claim Construction	Interlace’s Proposed Claim Construction
“an area to enable access to a cutting component”	“a window in the outer tubular member that has a sharpened edge for cutting tissue or holding tissue to be cut”

Once again, the disputed term in question appears, on its face, to be readily

---

<sup>7</sup> Cited dictionary references for the term “arch” are collectively attached as Ex. 6 to the Harris Decl.

understandable, insofar as it calls simply for a “cutting window.” The “cutting window” is described in several claims, such as “a cutting window disposed proximate to a tip of the outer tubular member” (Claim 15), and “the cutting window comprises an opening in the outer tubular member exposing the cutting member to tissue” (Claim 16). The cutting window is also described as part of a preferred embodiment in the specification:

...the shape of the cutting window 170 eliminates the galling between the inner and outer members 185, 186, and dulling of the cutting edge of the inner member 185.

The cutting window 170 is disposed proximate to the tip 188 of the outer member 186. The cutting window 170 exposes the inner member 185 over a length L.

*Id.*, 5:7-13. The use of this term in the claims and specification is entirely consistent with the ordinary meaning of the term “window,” such as “an opening in a partition or wall through which business is conducted <a bank teller’s window>.” *See, e.g.*, Webster’s Third New International Dictionary, attached as Ex. 7 to Harris Decl.

While some claims in the ’459 Patent describe the general shape of the cutting window, *none* describes a window with a “sharpened edge” as proposed Interlace’s construction. Further, while some of the claimed elements related to the cutting window have the advantage of “holding tissue to be cut,” that specific limitation urged by Interlace is not present in any claims, either. Nor are those limitations discussed in the specification. Because the term “cutting window” has a readily understandable meaning, and because Interlace’s proposed construction is based on limitations that do not appear in the claims or specification, S&N’s construction is more proper.

## V. CONCLUSION

For the foregoing reasons, S&N respectfully requests that the Court adopt S&N’s proposed constructions of the disputed claim terms.

Date: October 13, 2010

/s/ Maia H. Harris

Joseph J. Leghorn (BBO # 292440)  
Maia H. Harris (BBO #648208)  
NIXON PEABODY LLP  
100 Summer Street  
Boston, Massachusetts 02110  
(617) 345-1000  
(617) 345-1300 (facsimile)

Counsel for Plaintiff, Smith & Nephew, Inc.

**CERTIFICATE OF SERVICE**

I, Maia H. Harris, do hereby certify that a true copy of the above document was filed through the Court's ECF system on this 13<sup>th</sup> day of October 2010 and will be sent electronically to the registered participants as identified on the Notice of Electronic Filing (NEF).

/s/ Maia H. Harris

Maia H. Harris